



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,162	12/21/2001	John Michael Koshoffer	13DV-14056	8166

7590 02/07/2003

John S. Beulick  
Armstrong Teasdale LLP  
One Metropolitan Sq., Suite 2600  
St. Louis, MO 63102

EXAMINER

KOCZO JR, MICHAEL

ART UNIT	PAPER NUMBER
----------	--------------

3746

DATE MAILED: 02/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/026,162

Applicant(s)

KOSHOFFER ET AL.

Examiner

Michael Koczo, Jr.

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 1-5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 May 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Art Unit: 3746

## DETAILED ACTION

### *Election/Restrictions*

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1 to 5, drawn to a method for generating thrust from a gas turbine, classified in class 60, subclass 776.
- Electd* (II) Claims 6 to 20, drawn to a pulse detonation system for a gas turbine engine, classified in class 60, subclass 247.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as claimed can be used to practice another and materially different process. That is, characterizing chambers 100 and 102 as “deflagration” and “detonation” chambers in the apparatus claims merely recites the intended use or method of operating of these chambers which is not patentably limiting in apparatus claims. Structurally, the apparatus claims merely recite chambers, which could be used for processes other than deflagration or detonation combustion.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Art Unit: 3746

During a telephone conversation with Robert B. Reeser III on February 4, 2003 a provisional election was made with traverse to prosecute the invention of group II, claims 6 to 20. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1 to 5 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

#### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the structure of claims 11, 12, 13, 16, 17 and 19 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

*Specification*

The disclosure is objected to because of the following informalities: On page 3, lines 1 and 2 state that the “engine 10 also includes a core fan assembly (not shown).” This is inaccurate because figure 1 does in fact show a core fan assembly.

*Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 6 to 20 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The description of the structure and operation of the deflagration chamber 100 and the detonation chamber 102 are totally inadequate. What is the structure of these chambers? How does the gas flow from one chamber to the other? What is the structure of the vaneless radial nozzle? The chambers are shown in a merely schematic form which is inadequate for an understanding of their structure and function.

On page 5, paragraph 3, the description of the operation of the chambers is not understood. Lines 23 and 24 state that “Flow is directed from chamber 100 by the vaneless radial nozzle which operates above a critical pressure ratio into detonation chamber 102”. It is not understood how the flow is “directed” by the vaneless radial nozzle since no nozzle structure

Art Unit: 3746

is disclosed. It is also not understood what is meant by "critical pressure ratio" since this expression is not defined. What is the pressure to which is referred? Why does the nozzle operate above a critical pressure ratio? No control system is disclosed which would control operation of the nozzle.

The specification states that "Fuel is supplied to the deflagration chamber 100 such that chamber 100 is operated in a fuel-rich mode of operation". That is, all of the air is consumed during combustion. How is it then possible to combust the fuel rich combustion products in detonation chamber 102 in the absence of oxygen?

The specification states that "combustion is initiated within detonation chamber 102 by the externally energized ignition source." The specification then states that "When the pressure ratio reaches the critical value, detonation occurs within detonation chamber 102." This implies that ignition is spontaneous without the use of an externally energized ignition source, and therefore contradicts the previous quotation. Clarification is required.

Furthermore, whether deflagration combustion or detonation combustion occurs is dependent on structural and operational parameters which are not described. For example, why does the fuel in chamber 102 detonate instead of deflagrate?

Thorough revision of the specification is required. However, applicant is cautioned against the introduction of new matter by amendment.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 3746

Claims 14 to 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 14, there is no antecedent basis for "said turbofan inlet portion and said turbofan exhaust portion".

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 6 to 17, 19 and 20 are rejected under 35 U.S.C. 102(b) as being structurally anticipated by Jonker. Jonker discloses a turbofan engine having an exhaust center body 24 and combustion chambers 33 spaced radially therefrom. Also note movable flaps 30. Characterizing the chambers as "detonation" and "deflagration" chambers merely expresses the intended use of these chambers which is not patentably limiting in apparatus claims. Furthermore, whether or not deflagration or detonation occurs in these chambers is dependent on structural and operational parameters which are beyond the scope of the claims.

***Information Disclosure Statement***

The information disclosure statement filed on March 5, 2002 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about

Art Unit: 3746

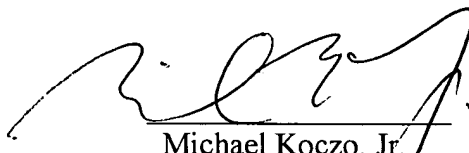
the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

*Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry relating to the status of this application or proceeding should be directed to the Customer Service Office whose telephone number is 703-306-5648.

Any inquiry relating to patent applications in general should be directed to the Patent Assistance Center at 1-800-786-9199.



Michael Koczo, Jr.  
Primary Examiner  
Group Art Unit 3746

M. Koczo, Jr./mnk  
February 5, 2003  
TEL 703-308-2630  
M-F 7:30 to 16:00  
FAX 703-308-7763